

# Notice of Allowability

Application No.

10/730,151

Examiner

James D. Stein

Applicant(s)

LEE ET AL.

Art Unit

2874

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the amendment filed on 8/12/05.
2. ☒ The allowed claim(s) is/are 1-2 and 4-9.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All b) ☐ Some\* c) ☐ None of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
  - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
    - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
  - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

## Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date \_\_\_\_\_.
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date \_\_\_\_\_.
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_.

  
John D. Lee  
Primary Examiner

  
James D. Stein  
Patent Examiner, AU2874

**DETAILED ACTION**

This Office Action is responsive to the amendment filed on 8/12/05, which has been fully considered and entered into the prosecution record. Claims 1, 2, 4, 7 and 8 are amended and claim 3 is cancelled. Therefore, claims 1-2 and 4-9 are pending in the application.

***Allowable Subject Matter***

Claims 1-2 and 4-9 are allowed.

With regard to claims 1 and 2, the following is an examiner's statement of reasons for allowance: None of the prior art or record discloses or suggests a planar light wave circuit comprising: a common region defined by each bordering end surface of a first to a third waveguides; the first waveguide for receiving external optical signals to be guided to the common region; the second waveguide having the end surface bordering the common region, so that lights outputted from the first waveguide are partially reflected by and partially incidented into the end surface of the second waveguide and then outputted through the second waveguide; and the third waveguide for receiving light reflected by the end surface of the second waveguide and outputting said light; wherein the common region is an opening formed on the planar light wave circuit.

The Andersen reference cited in the previous Office Action employs a prism as the common region. It would not have been obvious at the time of the invention to one of ordinary skill in the art to modify the device disclosed by Andersen such that the common region was an opening or empty space formed in a substrate because Andersen relies on said prism to guide the optical signal to subsequent optical waveguides. Such a configuration allows for a more simplistic design than that of Andersen.

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With regard to claims 4-9, as was discussed in the previous Office Action, the following is an examiner's statement of reasons for allowance: None of the prior art of record discloses or suggests the planar light wave circuit previously discussed above, wherein powers of a TE and a TM polarization of the optical signal are obtained from index of refractions of the first to the third waveguide, an index of refraction of the common region, and Fresnel coefficients of a TE and a TM polarization obtained from an incidence angle and angle of reflection of the optical signal based on a normal line of an end surface of the second waveguide. [USPAT 6,324,312] to Liao et al discloses a similar TE/TM Y-branch polarization splitter with a common prism region. However, this reference does not disclose the specific details of determining the powers of the TE and TM polarizations of the optical signal as limited by applicant in claim 4. Also, the reference does not teach the optical interaction between partially reflective end surfaces of the waveguides bordering the common region, as limited by applicant in claim 4.

For these reasons claims 1-2 and 4-9 are allowable over the prior art. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

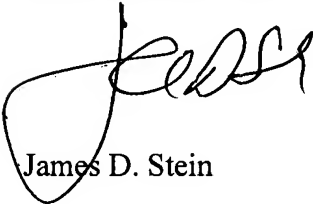
### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James D. Stein whose telephone number is (571) 272-2132. The examiner can normally be reached on M-F (8:00am-4:30pm).

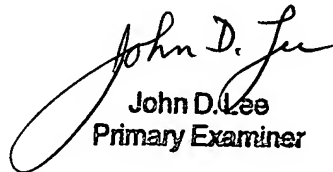
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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on (571) 272-2344. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



James D. Stein



John D. Lee  
Primary Examiner